

## REMARKS

Applicants have amended the specification and claim 17 (to refer the sequence identifiers rather than a figure). Applicants have canceled claims 11 and 12 without prejudice or disclaimer of the subject matter recited therein, and applicants reserve all rights to such subject matter. Although applicants do not acquiesce in the rejections, these amendments allow applicants to focus upon certain embodiments. Claims 13-17 remain pending.

### ***The claims meet the written description requirement***

On page 4-5 of the office action, the examiner rejected the claims due to an alleged lack of written description of cysteine desulfonase genes and DNA sequences integrated into these genes. Applicants respectfully traverse this rejection.

The USPTO issued its final guidelines for written description (66 Fed. Reg. 1099) in early 2001, republished at MPEP § 2163. The written description guidelines first instruct examiners to determine what the claim as a whole covers and then review the entire specification to determine whether all subject matter that is essential to the invention is actually recited in the claims. See written description guidelines at II(A)(1), (2). Next, the examiners are instructed to determine whether the applicant was in possession of all that is claimed. See the written description guidelines at II(A)(3). According to the guidelines, possession of a claimed invention can be shown by disclosure of structural characteristics, functional characteristics that correlate with structure or combinations thereof. See the written description guidelines at II(A)(3)(a).

Applicants submit that the examiner has not satisfied these guidelines in making the rejection, which alone is grounds for withdrawal of the rejection. Nevertheless, applicants demonstrate below that the structural requirements set forth in claims 13-17 find correspondence in the specification.

In making the rejection, the examiner stated that the specification "broadly describes a genus of cysteine desulfonase genes." While there is a broad and detailed description in the specification, claim 14 recites a *Bordetella pertussis* cysteine desulfonase gene. Figures 7A-7C disclose polynucleotide and amino acid sequence for a *Bordetella pertussis* cysteine desulfonase gene. Paragraph 58 teaches how to clone a *Bordetella pertussis* cysteine desulfonase gene, including a disclosure of appropriate primers. A transformed *Bordetella pertussis* knock-out mutant, which lacks cysteine desulfonase activity, has been deposited at the American Type Culture Collection. See paragraph 60 of the specification.

Applicants submit that the above discussion shows that it is clear that applicants had possession of the subject matter claimed. Given the correspondence and applicants' identification of this correspondence, a heavy burden is placed upon the examiner to reject the claims given that the specification is presumed adequate. See MPEP § 2163.04 (Rev. 1, February 2003). Applicants therefore request withdrawal of the rejection.

Turning to the DNA sequences, paragraphs 40-43 teach the skilled person that any nucleotide sequence can be inserted into the cysteine desulfonase gene in order to interrupt the gene. In some embodiments, the inserted sequence is a

marker gene. Applicants submit that such sequences are readily available and apparent to the skilled person, and therefore applicants were in possession of such DNA sequences. Applicants therefore request withdrawal of the rejection.

***The claims do not omit essential steps***

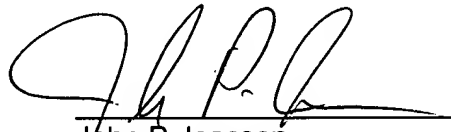
On page 6, the examiner rejected the claims for lacking a "recovery step." Applicants do not completely understand this rejection, but believe that the isolating step allows the claim methods to be practiced. The specification does not state that a separate "recovery" step is needed to practice the claimed method. Such a statement in the specification would be required in order to properly invoke the essential matter doctrine here. See the first sentence of MPEP § 2172.01. Since the specification does not make such a statement, the rejection should be withdrawn.

***Request***

Applicants submit that the claims are in condition for allowance, and respectfully request favorable consideration to that effect. The examiner is invited to contact the undersigned at (202) 912-2000 should there be any questions.

Respectfully submitted,

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Date

  
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